

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P838511

Luminaire Tested: HCSQ630D010-HM63040840-61SQLWW

Issue Date: 5/21/2024

**Test Information**

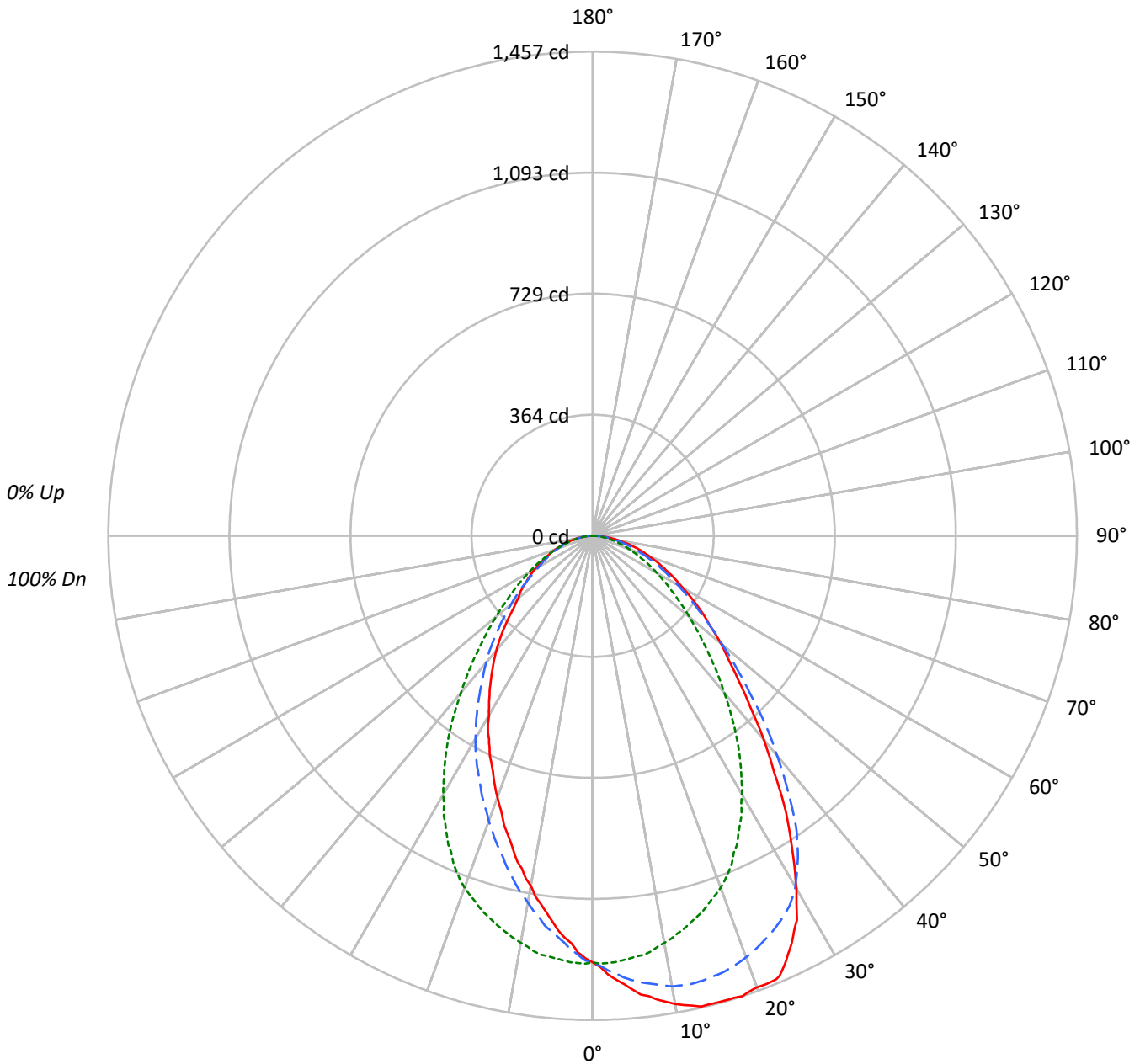
Test Method: LM-79-2019  
Report Number: P838511  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ630D010-HM63040840-61SQLWW  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2427.3 lumens  
Efficiency: N/A  
Efficacy: 86.1 lumens/watt  
Spacing Criteria (0/90/45): 1.11 / 1.08 / 1.17  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 28.2  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P838511  
CATALOG NUMBER: HCSQ630D010-HM63040840-61SQLWW

### Luminous Intensity Polar Plot





TEST NUMBER: P838511

CATALOG NUMBER: HCSQ630D010-HM63040840-61SQLWW

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87								
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75								
3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66								
4	87	76	69	63	85	75	68	62	73	66	62	71	65	61	68	64	60	58								
5	81	69	61	55	79	68	61	55	66	60	55	64	59	54	63	58	53	51								
6	75	63	55	49	74	62	55	49	61	54	49	59	53	48	58	52	48	46								
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	42								
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38								
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34								
10	58	46	39	34	57	45	38	34	44	38	34	44	38	33	43	37	33	32								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	124349	124349	124349	124349	124349
5°	133246	130503	124153	117745	115868
10°	140738	135460	122352	110184	105177
15°	145826	137973	119499	102138	95659
20°	149051	139129	116175	94072	86289
25°	148663	139118	109733	86228	78147
30°	137132	136438	100542	78863	69791
35°	119942	126204	90045	70544	63223
40°	101321	109231	77863	63092	57009
45°	85668	91504	66652	55349	49896
50°	76019	76742	57165	48258	43917
55°	68015	65684	49436	41549	41312
60°	60702	57253	43129	35941	38886
65°	55771	50877	37479	33398	35599
70°	51381	45546	33083	31129	33083
75°	48359	40630	28821	28297	30356
80°	44463	36402	25328	26053	27615
85°	44350	32845	21341	21341	24453

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 40°  
 Vertical Angle: 45°  
 Luminance: 92258 cd/sqm



TEST NUMBER: P838511

CATALOG NUMBER: HCSQ630D010-HM63040840-61SQLWW

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	121.1	5.0
10°-20°	337.4	13.9
20°-30°	481.3	19.8
30°-40°	496.0	20.4
40°-50°	399.3	16.5
50°-60°	282.4	11.6
60°-70°	183.0	7.5
70°-80°	98.3	4.1
80°-90°	28.4	1.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	939.9	38.7
0°-40°	1435.9	59.2
0°-60°	2117.6	87.2
0°-90°	2427.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2427.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1284	1284	1284	1284	1284	
5°	1370	1342	1277	1211	1192	133
15°	1454	1376	1192	1018	954	411
25°	1391	1302	1027	807	731	633
35°	1014	1067	761	596	535	630
45°	625	668	486	404	364	489
55°	403	389	293	246	245	360
65°	243	222	164	146	155	243
75°	129	109	77	76	81	137
85°	40	30	19	19	22	44
90°	0	0	0	0	0	



TEST NUMBER: P838511

CATALOG NUMBER: HCSQ630D010-HM63040840-61SQLWW

**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
0°	1283.6	1283.6	1283.6	1283.6	1283.6	1283.6	1283.6	1283.6	1283.6	1283.6	1283.6
1°	1297.4	1302.9	1298.7	1298.7	1294.6	1293.2	1296.0	1291.9	1290.5	1287.7	1282.2
2°	1320.7	1316.6	1315.2	1316.6	1308.4	1308.4	1304.2	1296.0	1291.9	1286.4	1271.2
3°	1337.2	1334.5	1331.7	1330.3	1322.1	1315.2	1309.7	1300.1	1291.9	1285.0	1263.0
4°	1352.3	1352.3	1349.6	1344.1	1335.8	1327.6	1316.6	1305.6	1293.2	1280.9	1252.0
5°	1370.2	1371.6	1359.2	1357.8	1348.2	1335.8	1323.5	1308.4	1293.2	1276.7	1245.1
6°	1388.1	1381.2	1378.4	1368.8	1355.1	1344.1	1329.0	1312.5	1291.9	1272.6	1230.0
7°	1396.3	1394.9	1388.1	1378.4	1366.1	1348.2	1333.1	1311.1	1289.1	1269.9	1219.0
8°	1410.1	1410.1	1401.8	1389.4	1371.6	1355.1	1335.8	1309.7	1287.7	1263.0	1203.9
9°	1419.7	1419.7	1408.7	1397.7	1381.2	1359.2	1337.2	1308.4	1280.9	1252.0	1190.2
10°	1430.7	1427.9	1419.7	1403.2	1389.4	1364.7	1337.2	1307.0	1276.7	1243.8	1176.4
11°	1438.9	1434.8	1425.2	1412.8	1390.8	1366.1	1337.2	1307.0	1271.2	1235.5	1162.7
12°	1445.8	1443.0	1430.7	1415.5	1393.6	1368.8	1335.8	1301.5	1261.6	1224.5	1144.8
13°	1454.0	1445.8	1433.4	1419.7	1394.9	1366.1	1330.3	1293.2	1254.8	1214.9	1129.7
14°	1452.7	1451.3	1440.3	1421.0	1393.6	1363.3	1329.0	1285.0	1245.1	1203.9	1111.8
15°	1454.0	1452.7	1440.3	1422.4	1392.2	1359.2	1324.8	1279.5	1235.5	1191.5	1094.0
16°	1454.0	1454.0	1437.5	1419.7	1390.8	1355.1	1316.6	1274.0	1225.9	1181.9	1078.8
17°	1454.0	1454.0	1440.3	1415.5	1386.7	1352.3	1308.4	1263.0	1214.9	1168.2	1056.9
18°	1456.8	1452.7	1434.8	1414.2	1381.2	1345.5	1302.9	1254.8	1205.3	1153.1	1041.7
19°	1449.9	1447.2	1432.0	1405.9	1377.1	1337.2	1294.6	1245.1	1195.7	1140.7	1023.9
20°	1445.8	1449.9	1429.3	1401.8	1368.8	1330.3	1286.4	1235.5	1181.9	1126.9	1006.0
21°	1447.2	1445.8	1423.8	1394.9	1363.3	1320.7	1276.7	1224.5	1166.8	1110.4	989.5
22.5°	1444.4	1440.3	1416.9	1385.3	1346.8	1308.4	1260.3	1206.7	1144.8	1081.6	957.9
23°	1438.9	1434.8	1416.9	1382.6	1341.3	1302.9	1252.0	1195.7	1136.6	1072.0	949.7
24°	1416.9	1415.5	1407.3	1372.9	1334.5	1291.9	1242.4	1177.8	1111.8	1044.5	929.0
25°	1390.8	1393.6	1389.4	1367.4	1323.5	1279.5	1227.3	1155.8	1088.5	1026.6	904.3
26°	1366.1	1366.1	1363.3	1355.1	1312.5	1265.7	1205.3	1129.7	1065.1	1000.5	878.2
27°	1334.5	1340.0	1334.5	1330.3	1301.5	1250.6	1181.9	1111.8	1039.0	975.8	856.2
28°	1309.7	1309.7	1307.0	1300.1	1290.5	1232.8	1157.2	1085.7	1014.2	953.8	831.5
29°	1265.7	1274.0	1275.4	1276.7	1275.4	1209.4	1133.8	1056.9	988.1	922.2	808.1
30°	1225.9	1234.1	1239.6	1249.3	1250.6	1188.8	1106.3	1033.5	963.4	898.8	787.5
32.5°	1117.3	1132.4	1147.6	1164.0	1172.3	1126.9	1039.0	959.3	887.8	830.1	724.3
35°	1014.2	1018.4	1034.9	1073.3	1081.6	1052.7	959.3	883.7	816.3	761.4	665.2
37.5°	897.4	905.7	929.0	973.0	975.8	952.4	887.8	799.9	736.6	688.5	604.7
40°	801.2	805.4	821.8	858.9	871.3	856.2	799.9	720.1	662.4	615.7	547.0
42.5°	705.0	710.5	731.1	760.0	777.9	760.0	710.5	641.8	585.5	551.1	492.0
45°	625.3	632.2	651.4	667.9	673.4	662.4	618.4	562.1	522.2	486.5	441.2
47.5°	556.6	563.5	577.2	584.1	591.0	580.0	545.6	498.9	459.0	430.2	388.9
50°	504.4	503.0	512.6	515.4	515.4	503.0	474.1	435.7	402.7	379.3	345.0
52.5°	445.3	448.0	454.9	452.2	450.8	439.8	415.0	382.1	354.6	334.0	302.4
55°	402.7	398.6	402.7	399.9	394.4	383.4	361.4	334.0	310.6	292.7	263.9
57.5°	355.9	355.9	357.3	351.8	345.0	332.6	313.3	291.4	270.7	255.6	232.3
60°	313.3	316.1	314.7	309.2	302.4	288.6	273.5	251.5	233.6	222.6	200.7



TEST NUMBER: P838511

CATALOG NUMBER: HCSQ630D010-HM63040840-61SQLWW

**CANDELA DISTRIBUTION (continued):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
67.5°	<i>213.0</i>	213.0	208.9	204.8	195.2	182.8	171.8	158.0	148.4	138.8	125.1
70°	<i>181.4</i>	184.2	178.7	171.8	164.9	156.7	144.3	133.3	123.7	116.8	105.8
72.5°	<i>156.7</i>	155.3	151.2	144.3	138.8	129.2	118.2	109.9	101.7	96.2	88.0
75°	<i>129.2</i>	129.2	125.1	119.6	112.7	104.4	96.2	89.3	82.5	77.0	72.8
77.5°	<i>103.1</i>	104.4	100.3	96.2	90.7	82.5	75.6	70.1	64.6	60.5	57.7
80°	<i>79.7</i>	81.1	77.0	74.2	67.3	63.2	57.7	52.2	48.1	45.4	44.0
82.5°	<i>60.5</i>	59.1	56.3	55.0	49.5	45.4	39.9	37.1	34.4	31.6	31.6
85°	<i>39.9</i>	38.5	37.1	35.7	31.6	27.5	26.1	23.4	20.6	19.2	19.2
87.5°	<i>20.6</i>	20.6	19.2	17.9	16.5	13.7	12.4	9.6	8.2	8.2	8.2
90°	<i>0.0</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P838511

CATALOG NUMBER: HCSQ630D010-HM63040840-61SQLWW

**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
0°	1283.6	1283.6	1283.6
1°	1278.1	1272.6	1271.2
2°	1261.6	1253.4	1254.8
3°	1246.5	1236.9	1227.3
4°	1227.3	1212.1	1212.1
5°	1210.8	1195.7	1191.5
6°	1195.7	1170.9	1165.4
7°	1181.9	1151.7	1142.1
8°	1158.6	1128.3	1118.7
9°	1142.1	1109.1	1099.5
10°	1120.1	1087.1	1069.2
11°	1102.2	1065.1	1051.4
12°	1083.0	1037.6	1023.9
13°	1061.0	1014.2	1006.0
14°	1040.4	995.0	979.9
15°	1018.4	971.6	953.8
16°	995.0	948.3	931.8
17°	975.8	923.5	911.2
18°	956.5	901.6	882.3
19°	933.2	880.9	858.9
20°	912.5	854.8	837.0
21°	890.6	835.6	816.3
22.5°	860.3	798.5	780.6
23°	850.7	787.5	768.2
24°	828.7	765.5	749.0
25°	806.7	749.0	731.1
26°	787.5	724.3	707.8
27°	768.2	705.0	687.2
28°	747.6	684.4	670.7
29°	727.0	662.4	648.7
30°	705.0	647.3	623.9
32.5°	650.1	597.8	578.6
35°	596.5	551.1	534.6
37.5°	544.2	507.1	492.0
40°	498.9	465.9	450.8
42.5°	452.2	421.9	406.8
45°	404.0	379.3	364.2
47.5°	360.1	339.5	323.0
50°	320.2	299.6	291.4
52.5°	281.7	268.0	272.1
55°	246.0	246.0	244.6
57.5°	211.6	221.3	222.6
60°	185.5	197.9	200.7





TEST NUMBER: P838511

CATALOG NUMBER: HCSQ630D010-HM63040840-61SQLWW

**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
67.5°	127.8	134.7	137.4
70°	109.9	115.4	116.8
72.5°	93.5	97.6	100.3
75°	75.6	81.1	81.1
77.5°	61.8	64.6	66.0
80°	46.7	48.1	49.5
82.5°	33.0	34.4	35.7
85°	19.2	20.6	22.0
87.5°	8.2	8.2	8.2
90°	0.0	0.0	0.0

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





— 0°-180°    - - 45°-225°    - - - 90°-270°

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





62.5°	277.6	280.4	276.2	269.4	262.5	250.1	236.4	217.1	203.4	192.4	173.2
65°	243.3	244.6	241.9	235.0	228.1	215.8	202.0	185.5	174.5	163.5	147.1

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



62.5°	166.3	175.9	177.3
65°	145.7	153.9	155.3

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)